

WHAT IS CLAIMED IS;

1. A non-washing rice manufacture apparatus, comprising:

a pressure rice washing means for washing polished rice through intermediate of water and air, a rinsing dehydrating means for removing water adhered to the polished rice passed through the pressure rice washing process, a moisture adjustment means for drying polished rice passed through rinsing dehydrating to adjust the moisture content thereof to a predetermined value, and a rice washing intensity adjustment means for controlling as desired the intensity of rice washing in the pressure rice washing process according to the conditions that the polished rice presents; wherein:

said pressure rice washing means has a plurality of water injection means for supplying polished rice with washing water, and an agitation roll provided with a helical projecting rib on the peripheral surface is disposed rotationally drivable in an agitation tube having an inlet of polished rice at one end and an outlet at the other end;

said rinsing dehydrating means is formed by disposing in a rotationally drivable manner a centrifugal dehydrating tube provided with a porous peripheral wall, disposing a screw tube inside the centrifugal dehydrating tube coaxially with the centrifugal dehydrating tube and differentially and rotationally drivable with the centrifugal dehydrating tube, pushing a rice supply pipe for supplying in the screw tube with polished rice from the pressure rice washing means through the screw tube, and providing a rice discharge port for discharging polished rice supplied from a rice supply pipe toward the peripheral wall of the centrifugal dehydrating tube, a screw blade for moving axially polished rice discharged from the rice discharge port in the axial direction along the peripheral wall of the centrifugal dehydrating tube, and a rinse water discharge port for discharging rinse water toward the polished rice moved by the screw blade;

said moisture adjustment means comprises a net disposed rotationally drivable for deploying polished rice from the rinsing dehydrating means over the top face thereof, and a suction blower for sucking air from under the net; and the rice washing intensity adjustment means is composed of a rice washing pressure adjustment means for controlling as desired the pressure to the polished rice in said pressure rice washing means.

2. The non-washing rice manufacture apparatus of claim 1, wherein:

said rice washing intensity adjustment means is composed of a pressure rice washing means whose inclination angle in the axial direction of the agitation tube can be set as will, an angle adjustment means for setting said pressure rice washing means to a desired inclination angle, and a rotation speed adjustment means of the agitation roll.

3. The non-washing rice manufacture apparatus of any one of claim 1 or 2, wherein:

said helical projecting rib formed on the peripheral surface of the agitation roll comprises a polished rice feed section, a rice washing section and a polished rice carrying-out section, the pitch of the helical projecting rib of said respective section is smaller in the feed section than that in the rice washing section, and larger in the carrying-out section than that in the rice washing section, and a drain section having a number of small holes is provided at points corresponding to said rice washing section and carrying-out section on the peripheral surface of the agitation tube.

4. The non-washing rice manufacture apparatus of any one of claims 1 to 3, wherein:

a draft is disposed upper than the rinse water discharge port of the screw tube peripheral wall, and a wind generating blade rotating integrally with the centrifugal dehydrating tube is disposed outside the centrifugal dehydrating tube

peripheral wall.

5. The non-washing rice manufacture apparatus of any one of claims 1 to 4, wherein:

the draft is disposed upper than the rinse water discharge port of the screw tube peripheral wall, the surrounding of the centrifugal dehydrating tube is covered with a casing having a exhaust drain port, and a suction blower is communicated with the exhaust drain port.

6. The non-washing rice manufacture apparatus of any one of claims 1 to 5, wherein:

the rotation speed of the net of an evaporation means is made adjustable.

7. The non-washing rice manufacture apparatus of any one of claims 1 to 6, wherein:

respective processing means are connected so that the polished rice inlet of a processing means of the following process side is positioned under the polished rice outlet of a processing means of the previous process side, thereby allowing the polished rice to pass sequentially respective processing means, without providing a transport means between respective processing means.

8. The non-washing rice manufacture apparatus of any one of claims 1 to 7, comprising:

a driving control means for controlling the operation of pressure rice washing means, rinsing dehydrating means, moisture adjustment means and rice washing intensity adjustment means, wherein the operation of said respective means is executed based on data concerning the polished rice input to the control means.

9. A non-washing rice manufacture apparatus, wherein:

a rice washing intensity adjustment means comprises a rice washing pressure adjustment means for controlling as will the pressure to the polished rice in the pressure rice washing means and a washing water flow adjustment means in

said rice washing means.

10. A non-washing rice manufacture method, comprising steps of :

washing polished rice in an agitation tube having therein an agitation roll,
disposed rotationally drivable, provided with a projecting rib on the peripheral
5 surface rinsing the polished rice passed through the rise washing process to
dehydrate attached moisture, and next, drying the polished rice to set the moisture
content to a predetermined value, wherein:

said step of washing polished rice comprises a feed step for transporting the
polished rice from the inlet of the agitation tube to the inside, a polishing step for
10 washing the polished rice and a rough rinsing step washing with water the polished
rice from the polishing step and, at the same time, said polished rice washing step
is so composed to wash the rice by adjusting the rise washing pressure, the
rotation speed of the agitation roll and the washing water supply amount, according
conditions presented by the polished rice.

11. The non-washing rice manufacture method of claim 9, comprising:

a control means for adjusting the rise washing pressure, the rotation speed
of the agitation roll and the washing water supply amount, wherein:

the rise washing pressure, the rotation speed of the agitation roll and the
washing water supply amount are adjusted based on the data concerning the
20 polished rice input to said control means.

DESCRIPTION OF SYMBOLS

- 1 rice washing intensity adjustment means
- 10 rice washing pressure adjustment means
- 20 rotation speed adjustment means
- 5 30 washing water quantity adjustment means
- 40 control means
- 100 pressure rice washing means
- 103 agitation tube
- 105 agitation roll
- 10 200 rinsing dehydrating means
- 300 moisture adjustment means